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PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PCT 1953-035/gw	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP 03/04200	International filing date (day/month/year) 02.04.2003	Priority date (day/month/year) 04.04.2002
International Patent Classification (IPC) or both national classification and IPC H02K33/02		
Applicant MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD. et al.		



1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 5 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 31.10.2003	Date of completion of this report 20.07.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Frapporti, M Telephone No. +49 89 2399-2243 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/JP 03/04200**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17):*

Description, Pages

1-14 as originally filed

Claims, Numbers

1-16 received on 19.03.2004 with letter of 18.03.2004

Drawings, Sheets

1/13-4/13, 6/13-13/13 as originally filed

5/13 received on 19.03.2004 with letter of 18.03.2004

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☒ the claims, Nos.: 17-21
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/JP 03/04200

5. ☒ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

see separate sheet

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-16
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-16
Industrial applicability (IA)	Yes: Claims	1-16
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item I

Basis of the report

- 1) The amended drawing Fig. 7 filed with the letter dated 18.03.2004 introduce subject-matter which extends beyond the content of the application as filed, contrary to Article 34(2)(b) PCT.

Although the applicant stated in his letter of reply that the "no"-output of "timer IV=0 determination"-box was corrected as an obvious error and that this amendment was based on page 11, lines 2 to 8 of the description, this amendment was not originally disclosed. Neither on page 11 nor elsewhere in the description there is disclosed, that the "no"-output of "timer IV=0 determination"-box should return to the "Zero-cross determination"-box. It is believed that the original loop back to its own input was not an error because if there has no zero cross been detected in (25) the timer IV (31) starts counting (closed loop to its input) until it counts up ("yes"-output of "timer IV=0 determination"-box) and this loop is fed as a trigger signal into multi-vibrator (33) (cf. Fig. 2 and description page 8, lines 16 - 21).

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- 2) Reference is made to the following documents:

D1: US-A-5 682 132 (HIROYOSHI HIDETOSHI ET AL) 28 October 1997 (1997-10-28)
D2: EP-A-0 726 394 (SAWAFUJI ELECTRIC CO LTD) 14 August 1996 (1996-08-14)
D3: EP-A-0 952 663 (MATSUSHITA ELECTRIC WORKS LTD) 27 October 1999 (1999-10-27)

- 3) Document D1, which is considered to represent the most relevant state of the art, discloses (cf. column 6, lines 43 - 47 and column 16, line 54 - column 17, line 16) a vibration linear actuating device comprising a vibrating linear actuator, from which the subject-matter of claim 1 differs in that the device comprises a driver for driving the actuator.

The problem to be solved by the present invention may therefore be regarded as to provide a driver for driving a vibrating device.

The solution proposed in claim 1 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons.

A driver as disclosed in claim 1 has already been employed for the same purpose in a similar device, see document D2, column 1, line 22 - column 4, line 57. It would therefore be obvious to the person skilled in the art, to apply this driver with corresponding effect to a device according to document D1, thereby arriving at a device according to claim 1.

Also in the driver disclosed in D2 a zero-cross monitor (Timer IC 6) is interposed between a zero-cross detector (8) and a output controller (4) and the zero-cross monitor (Timer IC 6) monitors the zero-cross signal (at Pin No. 5) and prohibits acceptance of a next zero-cross signal for a given time after input of the zero-cross signal (until the voltage at Pin No. 6 has reached at least the lowest level of the trigger waveform differentiated by the differentiation circuit R6 and C6 at Pin No. 6; cf. Fig.2(7) and description column 4, lines 5 - 37).

The same reasoning applies, mutatis mutandis, to the subject-matter of the independent claim 10 which therefore is also considered not inventive.

Document D2 discloses (cf. column 1, line 22 - column 4, line 57) a method of driving a vibrating linear actuator, from which the method of claim 7 differs in that it comprises a (special) step of determining a period for powering the coil at starting time.

This feature has already been employed for the same purpose in a similar method, see document D3, column 6, line 27 - column 7, line 22. It would therefore be obvious to the person skilled in the art, to apply this feature with corresponding effect to a method according to document D2, thereby arriving at a method according to claim 7.

The method proposed in claim 7 of the present application can therefore not be considered as involving an inventive step (Article 33(3) PCT).

- 4) Dependent claims 2 - 6, 8, 9 and 11 - 16 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step, see documents D1 - D3 and the corresponding passages cited in the search report.